

# A new species of *Trachys* (Poaceae) from East Coast of Tamil Nadu, India

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## Abstract

A new species of *Trachys* viz., *Trachys narasimhanii* P. Ravichandran is being described. This species is allied to *T. muricata* (L.) Pers. and *T. copeana* Kabeer & V.J. Nair but it is dissimilar from them in possessing thin, long divaricate spicate racemes and loosely arranged two clusters of spikelets, each cluster with 2–7 spikelets which are non muricate.

**Keywords:** New grass, *Trachys narasimhanii*, non muricate spikelet, Tamil Nadu

## Introduction

The grass genus *Trachys* Pers. is represented by two species one of which is endemic to India and the other is found in Myanmar and Sri Lanka. *Trachys* is distributed more commonly along coastal zones than the inlands and occasionally wherever the soil is sandy. Twenty years ago and before erecting a Thermal Power Plant at Ennore - the Northern region of Chennai along the coastal belt, a survey was conducted for biodiversity and ecological impact assessment. During that survey and field study a different population of *Trachys* sp. was collected along with *Digitaria bicornis* (Lam.) Roem. et Schult. ex Loud. and *T. muricata* (L.) Pers. Now the collection place is occupied by a thermal power plant. In all other collection spots we could find mixed populations of *Trachys* sp., *T. muricata*, and *D. bicornis*, the former grass which is very much dissimilar to *T. muricata* is described here as a new species.

***Trachys narasimhanii* P. Ravichandran sp. nov.**

**Fig. 1**

The species is allied to *Trachys muricata* (Bor, 1960; Watson & Dallwitz, 1994) and *Trachys copeana* (Kabeer & Nair, 2007 & 2009). The important diagnostic characters in distinguishing the described species from already known two species of *Trachys* are texture of leaf and leaf sheath, size and nature of spikelet cluster and nature of bisexual spikelets (Table 1).

**Typus:** INDIA, Tamil Nadu, Ennore, VGP Wonderland, along the East coast and the

protected areas of thermal power plant, 13°12'02.54" N 80°19.00.36" E, 15–22 m, November 28, 1992, P. Ravichandran & D. Narasimhan 408. (Holotypus, MH; Isotypi, K, Madras Christian College Herbarium (MCCH), Tambaram, Chennai and Sri Paramakalyani Centre for Environmental Sciences Herbarium, Alwarkurichi (SPKCESH).

Annuals, culms stoloniferous, decumbent, more or less ribbed, up to 70 cm high; nodes villous, lower ones rooted. Leaves linear-lanceolate, 4–9 × c. 0.7 cm, acute to acuminate at apex, truncate at base, flat to inrolled, velvety pubescent, margins wavy, finely serrulate towards apex; ligules 1–2.5 mm, tuberculate, hyaline; leaf sheath terete, 2–6 cm, tightly enclosing internode, pubescent, margins flat, hyaline; basal sheath persistent, hairy. Inflorescence spike like racemes, the underside of each bearing alternating clusters of spikelets not covered by spiny bracts or involucre, racemes 2 to 9 cm long, spicate, divaricate, spikelet clusters 2–4 mm apart; pubescent at divergence; joints glabrous, triquetrous c. 7 × 1.2–2.2 mm, green, many nerved, margins winged, straight to curved, peduncle 5–11 cm, terete, bearded near apex. Raceme joints pink in color, bulged 2–3 mm across, comprising 2 clusters of spikelets, cluster size 4–5 × 2–4 mm, each cluster with 2–7 spikelets of dissimilar in size, often bisexual and one spikelet is barren or with incomplete florets; entire cluster disarticulating at maturity. Spikelets narrowly lanceolate, 4–5 × 2–4 mm, acute-acuminate at apex, truncate at base, lower portion not bulged, coriaceous, green-

yellow when mature; pedicel 1–2 mm long, thick, stout, greenish yellow. Glumes shorter than the spikelets, lower glume reduced, scale-like,  $0.2-0.5 \times 0.2-0.3$  mm, apex obtuse, truncate at base, flat, sub-coriaceous, nerveless. Upper glume lanceolate,  $2-3.7 \times 0.5-0.8$  mm, acuminate at apex, truncate at base, chartaceous, green, prominently 3-nerved, sparsely ciliate all along. Spikelet with two florets; lower barren with 2 lodicules, upper bisexual. Lower lemma broadly lanceolate,  $3.5-5$  mm  $\times$   $2-3$  mm, acuminate at apex, truncate at base, coriaceous, yellowish green when mature, prominently 9–11-nerved, nerves green, lateral nerves free from middle nerve, margins flat, hyaline, inrolled. Lower palea oblong, often reduced,  $0.3-0.5 \times 0.2-0.3$  mm, in young spikelets obtuse at apex, truncate at base, sub-coriaceous, yellowish-green, flap-like, 2-nerved, margins flat, hyaline, sparsely ciliate in basal portion. Upper lemma lanceolate,  $3-3.2 \times 1-2$  mm, acuminate at apex, truncate, hyaline, membranous, 3-nerved, margins inrolled. Upper palea lanceolate,  $3-3.1 \times 1-1.5$  mm, acute at apex, slightly chartaceous,

transparent, 2-nerved, margins in rolled. Lodicules 2,  $0.4-0.5$  mm, delicate, hyaline. Stamens 3; anthers 1–1.5 mm long, yellow-green; filaments *c.* 1.2–1.6 mm long, hyaline. Ovary oblong, *c.*  $0.7 \times 0.3$  mm, style *c.* 2 mm; stigma plumose, *c.* 1.5–2 mm, light brown. Caryopsis oblong-lanceolate,  $2-2.8 \times c.$  1.2–1.5 mm, obtuse at apex, truncate at base, flat; embryo up to  $\frac{1}{2}$  its length.

**Etymology :** The specific epithet is named so to honour and recognize Dr. D. Narasimhan, Professor of Botany, Madras Christian College, Tambaram, Chennai for his immense contributions to botany and specifically in the field of Biodiversity and Angiosperm Taxonomy.

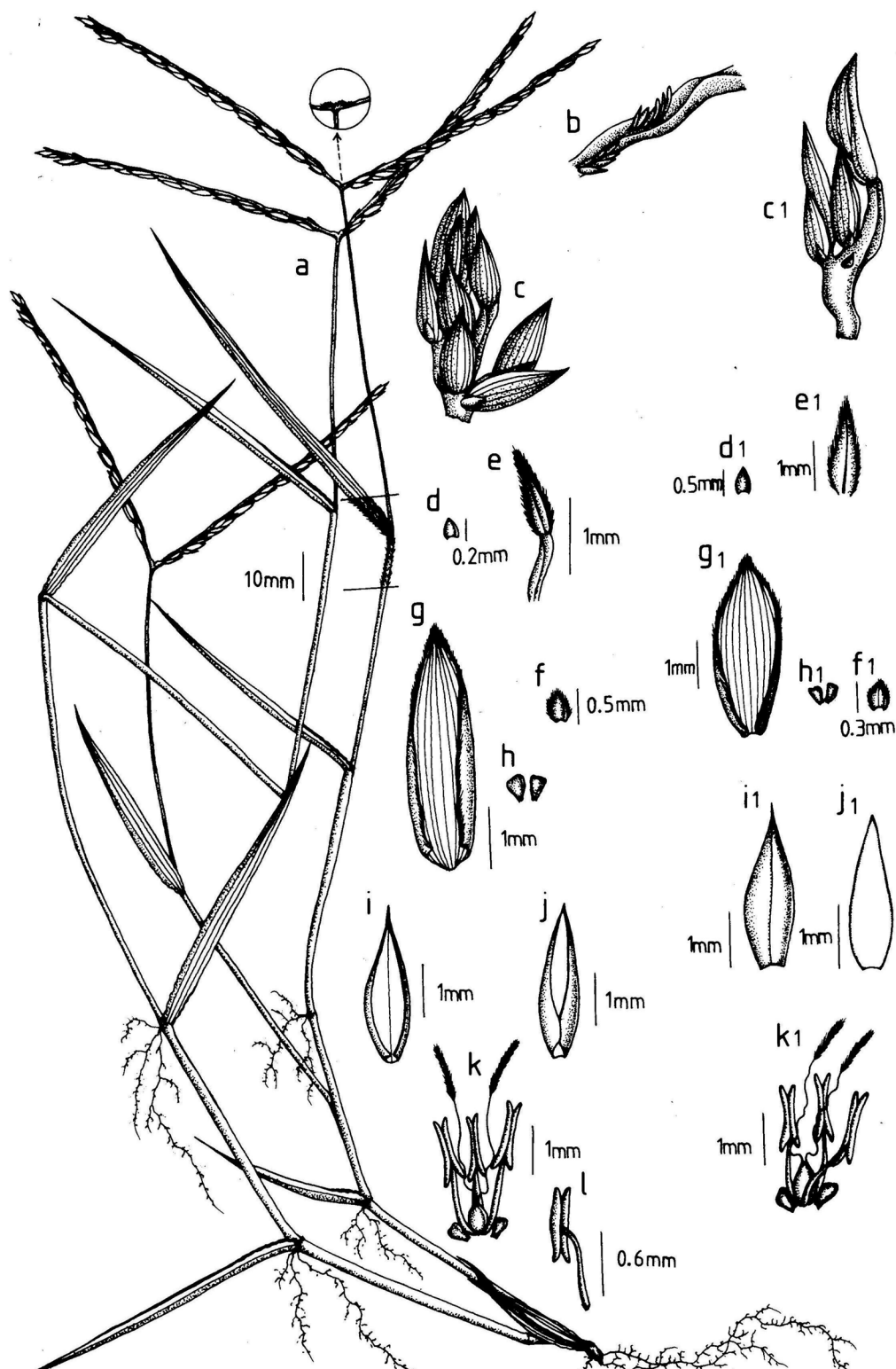
**Flowering & Fruiting:** November - February.

**Habitat:** Sandy coasts, rarely in open habitats of inland, red gravelly-sandy soil, often observed along with mixed populations of *Digitaria bicornis* and *Trachys muricata*.

**Paratypes:** INDIA, **Tamil Nadu**, Dharmapuri District, Sengankottavur, 17.01.1993, S. Krishnan

**Table 1.** Comparative description of characters of three species of *Trachys*

Characters	<i>T. muricata</i> (L.) Pers.	<i>T. copeana</i> Kabeer & V.J. Nair	<i>T. narasimhanii</i> sp. nov.
Leaf and sheath	Tuberculate hairy; tomentose when juvenile	Always densely tomentose	Always densely hairy-tomentose
Cluster of spikelets in each raceme segment	Contains three large groups of spikelets; each possessing two bisexual and two barren spikelets	Contains one group of three bisexual spikelets; all similar in shape, size and texture	Contains two groups of spikelets, with 2–7 spikelets in each and often one barren and remaining bisexual; dissimilar in size
Cluster gap	7–9 mm	4–5.5 mm	2–4 mm
Cluster size	<i>c.</i> $8 \times 6$ mm	<i>c.</i> $4.2 \times 3.5$ mm	<i>c.</i> $6 \times 4$ mm
Sterile spikelets	Present	Absent	Present
<b>Bisexual spikelets:</b>			
Size	$6.5-7 \times c.$ 2.5 mm	$4-4.2 \times 2-3$ mm	$4-5 \times 2-4$ mm
Lower glume	Well developed, <i>c.</i> $1.5 \times 0.6$ mm	Absent or reduced and scale-like $0.3-0.4 \times c.$ 0.4 mm	Reduced, scale-like, $0.2-0.5 \times c.$ 0.3 mm
Lower lemma	Acuminate - cuspidate, pungent apex, broadly expanded, margins wavy, dorsally flat; $4-6.5 \times 2-3$ mm	Acute not pungent; more or less bulged up to middle and flat above; margins straight; $3.5-4.2 \times 2-3$ mm	Acuminate, broadly lanceolate up to middle and flat above, margins narrow, $3.5-5 \times 2-3$ mm
Anther length	<i>c.</i> 2.2 mm	1.3–1.5 mm	1–1.5 mm



**Fig.1.** *Trachys narasimhanii* P. Ravichandran *sp. nov.*: **a.** Habit and rachis joints in close up; **b.** A portion of rachis with a cluster of spikelets; **c.** Cluster 1 of spikelets; **d.** Abaxial view of lower glume; **e.** Adaxial view of upper glume with pedicel; **f.** Adaxial view of lower lemma; **g.** Abaxial view of upper lemma; **h.** Lodicules; **i.** Adaxial view of upper lemma; **j.** Adaxial view of upper palea; **k.** Upper floret; **l.** Stamen; **c1.** Cluster 2 of spikelets **d1.** Abaxial view of lower glume; **e1.** Abaxial view of upper glume with pedicel; **f1.** Abaxial view of lower lemma; **g1.** Adaxial view of upper lemma; **h1.** Lodicules; **i1.** Abaxial view of upper lemma; **j1.** Abaxial view of upper palea; **k1.** Upper floret.

417 (MCCH); Dindigul District, Kannivadi, 08.12.2001, P. Ravichandran 517, (SPKCESH).

*Note:* This taxon resembles the other two species of *Trachys* superficially. However, it can be distinguished from them as detailed in Table 1.

## Acknowledgements

I thank Dr. T.A. Cope, Royal Botanical Garden, Kew for his opinion and suggestion to treat this taxon as a new species. I also thank Mr. S. Mariappan, Art Teacher, Govt. Higher Secondary School, Ambasamudhram, Tamil Nadu for the illustration.

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Received: 12.12.2012

Revised and Accepted: 06.06.2013